

- (Continued from page 1)
- vacuum pressure required for vapor extraction, and
 - volatile organic compound (VOC) removal rates.

Along with testing the performance of the AS/SVE recovery system, the study evaluated how well a bio-sparge treatment system would perform. This system may be used to treat a portion of the contaminant stream.

With the pilot test data well in hand, the designers and base personnel will develop the most cost-effective system to remediate these three sites.

SWMU 10B, with primarily benzene contamination near the flight line, will use a series of wells to intercept the benzene groundwater plume, recover the benzene using the AS/SVE technology and treat it with the help of the bio-sparge system, as well as other technologies.

The design for SWMU 20 will consist of AS/SVE technologies. Here trichloroethene (TCE) and other volatile organic compounds (VOCs) will be removed. At this location TCE concentrations are in the range of 1,000 parts per billion (ppb).

Located in the Building 140 area, SWMU 40 will use similar technology to remove primarily chlorobenzene, from the soil and groundwater, along with other non-methane organics. The concentration of chlorobenzene in the area is approximately 10,000 parts per million (ppm). In addition, the concentration of BTEX compounds ranges from 700 ppm to 4,800 ppm for SWMU 40.

It is expected at SWMU 40 that an air scrubber will be used to capture any chlorinated compounds.



Mr. Brent Jacobs identifies contaminant concentration areas for SWMU 40 as Mr. Breazeale leads the discussion of remediation options.

Visit us on the web at
www.em.robins.af.mil

For more information regarding the RAB, contact
Ms. Charline Logue,
Robins AFB RAB Manager
(478) 926-1197, ext. 128.

Restoration Advisory Board Members		
Mr. Steven Coyle, Robins AFB Installation Co-Chair	Dr. Dan Callahan, Warner Robins Community Member	Mr. Mike Maffeo, Macon Community Member
Mr. James Harden, Warner Robins Community Co-Chair	Ms. Marianne Golmitz, Warner Robins Community Member	Dr. M.B. Neace, Macon Community Member
Ms. Liz Wilde U.S. EPA Region 4 Federal Facility, Hazardous Waste Div.	Mr. Mike Hutchinson, Centerville Community Member	Dr. Brian E. Rood, Macon Community Member
Mr. Brent Rabon GA EPD Hazardous Waste Management	Dr. Joyce Jenkins, Fort Valley Community Member	Ms. Kathy Stege, Macon Community Member
Mr. Kevin Long, Robins AFB Chief, Compliance and Restoration Division	Mr. Steve Johnson, Macon Community Member	Dr. Joseph Swartwout, Fort Valley Community Member
	Mr. Broderick Lowe, Warner Robins Community Member	Mr. Don Thompson, Macon Community Member



A publication of Robins AFB

Fact Sheet

Robins Air Force Base Restoration Advisory Board



Volume IV, Issue 3, September 2001

The Robins AFB RAB

Recognizing the importance of public involvement in environmental restoration, Robins Air Force Base (AFB) established the Restoration Advisory Board (RAB) in 1994. The mission of Robins AFB's RAB is to encourage community participation in the Air Force Environmental Restoration Program (ERP) cleanup process and allow community members and other stakeholders to have meaningful dialog with base officials. The RAB includes members from the community, regulatory agencies, and the base, and holds four public forums per year. The RAB serves to advise Robins AFB and disseminate information to the public.

September RAB Meeting Held

The RAB held their fall meeting on September 13, 2001, at the Hampton Inn in Centerville, Georgia. Various topics were discussed, including designs and pilot programs underway to remediate identified solid waste management units (SWMUs) and the expansion of the currently operational Groundwater Treatment System. (See SWMU reference table on page 3.)

The RAB *Fact Sheet* provides a summary of the information and topics discussed in the last meeting. **The next meeting will be held on January 10, 2002.**



We remember ...

A moment of silence was observed for friends, family, fellow citizens, and rescue teams tragically impacted by the events just two days prior to the September 13 RAB meeting.

Mr. Steven Coyle, the Board's Installation Co-Chair and Director, Environmental Management Directorate, expressed gratitude to those who were able to attend the meeting and asked for the observance in sympathy for those so sadly affected and in deep appreciation of those engaged in the ongoing rescue efforts.

Groundwater Clean-up in Base Industrial Area - System Designs and Studies

Pilot studies and designs for restoration of SWMUs 10B, 20, and 40 are currently underway. **Brent Jacobs** of **URS Corporation** (URS) provided the details of design efforts towards remediation of these sites after a summary introduction by **Mike Breazeale**, Environmental Engineer at the base.

The technology described in the March 8, 2001, *Fact Sheet*, under the title "Innovative Technologies to be Utilized," is to be assessed for use in the remediation of these SWMUs. This technology, Air Sparging with Soil Vapor Extraction (AS/ SVE), utilizes air injection into the groundwater with the resulting vapors collected for removal of the captured contaminants.



Mr. Mike Breazeale discusses groundwater cleanup activities including the Air Sparging/Soil Vapor Extraction programs conducted in the Greater Base Industrial Area.

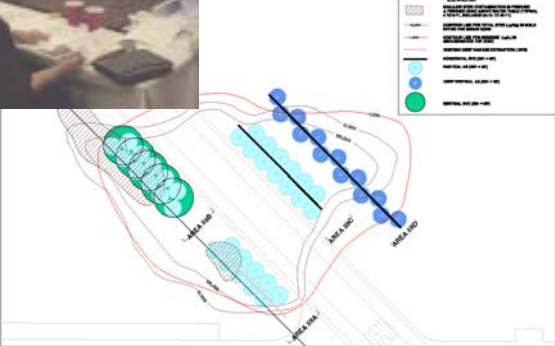

A pilot test of the contaminant recovery and removal equipment produced data to assist in the design efforts. Using vertical and horizontal collection wells and the AS/SVE systems, the types of data collected included:

- radius of influence for the vapor extraction process,
- air flow rate for the sparge system,

(Continued on page 4)

Groundwater Clean-up: Flight Line JP-8 - System Designs & Studies

Steve Battle, Environmental Engineer at the base, along with **Steve Hvizdzak**, **CAPE Environmental**, presented details regarding the AS/SVE designs to remediate SWMUs 59, 60, and 61. The primary contaminants in groundwater at these site are benzene, toluene, ethylbenzene, and xylenes, known as BTEX compounds. These contaminants resulted from the flight line use of jet fuel, primarily JP-8, in this area.



RAB members benefited from the full-color printed graphics used as part of the SWMU 59, 60, and 61 presentation to communicate some of the complex groundwater remediation issues associated with these areas of the base.

In presenting the design elements, **Mr. Hvizdzak** commented on the special considerations given to collecting the benzene groundwater plume which currently resides under taxiways that are part of SWMUs 59 and 60.

The design will include vertical and horizontal recovery wells, including a cut-off curtain to keep the plume from migrating. This AS/SVE system, augmented by biodegradation, will complement the vapor extraction operation currently at work since March 2000.

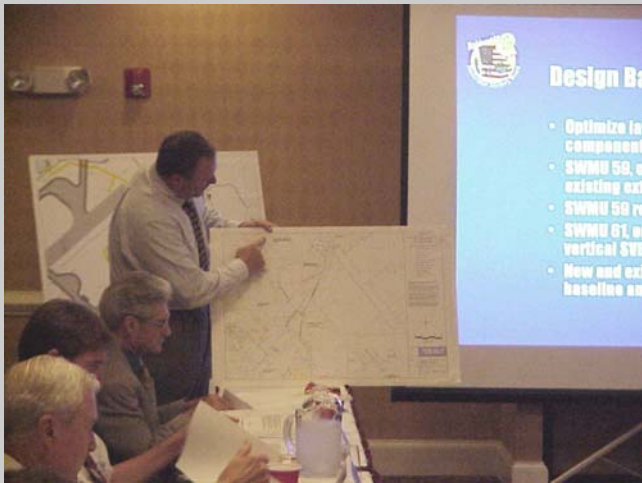
The extracted vapors will be treated in the new system using thermal oxidation.

A field pilot study will refine the well placement. Because SWMUs 59 and 60 are similar, one pilot test

will be used for both; SWMU 61 will be a separate pilot regime.

Construction is expected to begin in late 2002 with system operations continuing for a period of up to five years. West of the runway, monitoring for the plume’s natural attenuation will take place for the required 30 years.

To make the project highly cost effective, several special design elements were incorporated, including co-locating the SWMU 61 and 10B equipment and utility connections.



Mr. Steve Hvizdzak identifies the location of SWMU activities to RAB members.

Base Public Affairs Approves New RAB Brochure


Public Affairs has given approval for the release of a new public information and education tool related to the RAB. A four-page, full-color brochure will assist citizens in the local community in understanding the mission of the RAB and their importance in providing the base with feedback concerning the environmental restoration program. A copy of the new brochure was provided to all RAB members. **Charline Logue**, RAB Manager, welcomes any suggestions or comments for future revisions.

Groundwater Clean-up: Groundwater Treatment System Phase III Expansion

With introductions by **Kevin Long**, Chief, Compliance and Restoration Division at the base, and detailed explanation by **Mark MacEwan**, **Earth Tech**, the topic of expanding the Groundwater Treatment System was presented.

This expansion represents the third phase of this system and is a consequence of additional loading. This expansion will meet the challenge of treating new flows of groundwater from three restoration areas: the Base Industrial Area, storm sewers, and one storm drain.

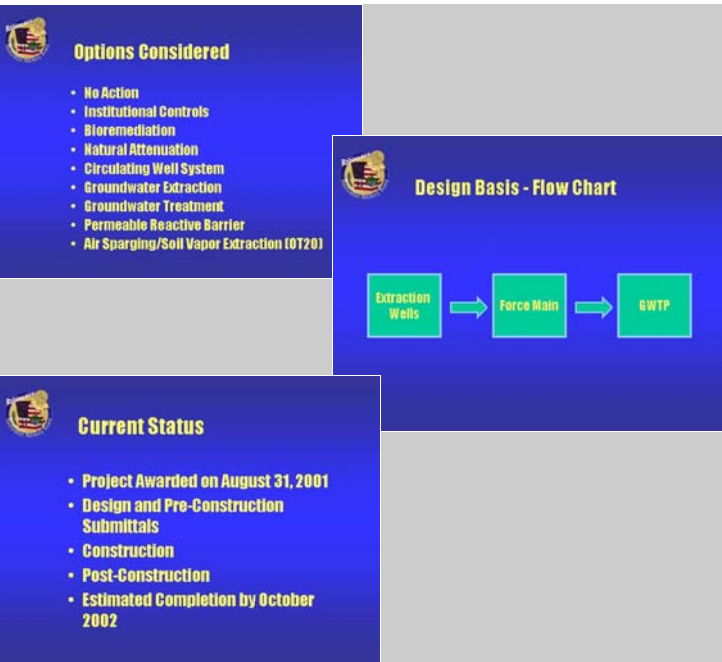
Using a design/build methodology, the designers envision a total of 13 new extraction wells to be installed, with 8,500 feet of new force main. These new wells



Mr. Mark MacEwan describes to the RAB members the activity areas covered by the Phase III Expansion.

will add 390 gpm to the current 400 gpm entering the treatment system. With an original design of 900 gpm, it is expected the facility will have no difficulty managing the new flows.

Anticipating operation of this third phase by October 2002, the Groundwater Treatment System will be subsequently evaluated for potential upgrading of technology and impacts of well pumping rates.



Mr. MacEwan’s presentation featured the options considered, the remedy selection rationale, and an assessment of the current status of the expansion.

Environmental sites (SWMUs) referenced in this Fact Sheet			
SWMU No.	Location	Description	Major Contaminant Type
10B	POL Yard	JP-4 (jet fuel) Spill Site	BTEX (Fuel Constituents)
20	Greater Base Industrial Area (GBIA)	Solvent Plume	Trichloroethylene (TCE), 1,2 dichloroethylene (DCE)
40	Building 140, Base Industrial Area	Solvent plume	Chlorobenzene
59	Main Controlled Taxiway	JP-8 Product Line Leak	BTEX (Fuel Constituents)
60	Intersection of Taxiways 2 and 3	JP-8 Product Line Leak	BTEX (Fuel Constituents)
61	South End, Main Runway	JP-8 Product Line Leak	BTEX (Fuel Constituents)